



Department of Commerce

Safety & Buildings Division

201 West Washington Avenue

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Madison, WI 53701-2658

Evaluation # 200330-O

Wisconsin Building Products Evaluation

Material

Tuff-N-Dri Waterproofing

Manufacturer

Tremco Barrier Solutions, Inc.
6402 E. Main Street
Reynoldsburg, Ohio 43068

SCOPE OF EVALUATION

GENERAL: This report evaluates the use of Tuff-N-Dri spray-applied waterproofing membrane, manufactured by Tremco Barriers Solutions, Inc.

This review includes the cited **Comm** code requirements below in accordance with the current **Wisconsin Uniform Dwelling Code (UDC)**, (for 1 & 2 family dwellings):

- **Dampproofing:** Tuff-N-Dri spray-applied waterproofing membrane was evaluated in accordance with dampproofing requirements of s. **Comm 21.18(3)(a)4**.

DESCRIPTION AND USE

Tuff-N-Dri Waterproofing is a spray applied polymer-modified asphalt waterproofing foundation membrane, installed to a thickness of 63 mils (40 mils dry), to exterior below-grade foundation walls of concrete or concrete masonry unit construction. The material is available in 55-gallon drums, having a density of 8.1 pounds per gallon. Storage shall be above 50° F. Shelf life is a maximum of 12 months.

INSTALLATION: Tuff-N-Dri Waterproofing is applied only by a Koch Waterproofing Solutions selected waterproofing contractor to ensure proper installation. The installation shall conform to the manufacturer's instructions. A primer material is not required prior to application of the material, and immediate backfill pressure, after application, is not necessary.

Substrates shall be clean, smooth, firm, free of dust, mud, loose mortar, wires and any other substances that might prevent proper placement and bonding. Wall ties shall be removed and mortar joints shall be flush. Cracks, voids
SBD-5863 (R. 10/00)

and holes shall be patched with non-shrinking grout or asphalt mastic, with non-shrinking grout preferred for large defects.

Tuff-N-Dri Waterproofing shall only be applied when heated to between 140° F and 160° F and when the air temperature is at least 20° F. The time needed for the coating to cure before backing is 16 to 24 hours; lower air temperatures require a longer curing time. Application rate of the material is dependent upon the foundation wall surface; for cast in place or precast concrete and parged concrete masonry units, the rate shall be 25 sq. ft./gal. and for concrete masonry units, 20 sq. ft./gal. Tuff-N-Dri Waterproofing is permitted to be applied to concrete foundations as soon as the forms are removed and to concrete masonry unit foundations when the mortar has cured.

Concrete and masonry shall not be frozen. After application, Tuff-N-Dri Waterproofing is limited to no more than 15 days exposure to sunlight prior to backfilling.

IDENTIFICATION: Each container shall bear the manufacturer's name, address, and product name and this evaluation report number.

TESTS AND RESULTS

Tensile strength, elongation and Shore A Hardness testing on Tuff-N-Dri spray-applied waterproofing membrane was preformed by DL Laboratories (Report No. DL-8980-R), with average test results for tensile strength and elongation of:

Dry Film Thickness	Tensile Strength	Elongation
<u>(mils)</u>	<u>(psi)</u>	<u>(%)</u>
40	23	1160

The Shore A Hardness of the coat was determined to be 40.

Tensile Strength and Elongation, Durability, Flow Resistance as a Function of Pressure, Water Absorption and Hardness test procedures were done by DL Laboratories (Report No. DL-8980-R). The tests included:

- Tuff-N-Dri spray-applied waterproofing membrane's ability to remain in place, per **ASTM C836**, Par. 5.9;
- Tensile and elongation per **ASTM D412**, Method A; durability per **ASTM D3273** for 672 hours and **ASTM D3274** for Degree of Surface Disfigurement by Microbial Growth;
- Flow Resistance as a Function of Pressure per **ASTM E96**, Procedure B – Wet Cup Method;
- Adhesion-in-Peel per **ASTM C836**, Par. 4.9;
- Ability of Material to Resist Hydrostatic Pressure per **ASTM C836**, Par. 5.12;
- Low Temperature Flexibility and Crack Bridging determined by the procedures outlined in **ASTM C836**, Par. 5.7; and
- Hardness and weight loss as determined by the procedures outlined in **ASTM C836**, Par. 5.5 and 5.6, respectfully.

LIMITATIONS OF APPROVAL

General: This evaluation is limited to Tuff-N-Dri spray-applied waterproofing membrane. The evaluation shall be used by designers, contractors and code officials (building plan reviewers and inspectors), to determine that the evaluation subject complies with the code requirements specifically addressed, provided that this product is installed in accordance with the below conditions, pertaining to masonry walls.

1. Tuff-N-Dri spray-applied waterproofing membrane is limited to application on the exterior **vertical** surfaces of below-grade foundation walls of concrete and masonry construction.
2. Surfaces of the foundation walls to be waterproofed/dampproofed shall be clean, dry and free of mortar, sand, soil, water, frost or other loose derbies. The surfaces shall be smooth and free of projections including form ties. Concrete and masonry surfaces shall be cured and dry prior to application of Tuff-N-Dri spray-applied waterproofing membrane.

3. All voids, tie holes and honeycombed areas in the foundation wall shall be filled with non-shrink grout (allow adequate time to cure before membrane application), or an asphalt based mastic.
4. Tuff-N-Dri spray-applied waterproofing membrane shall be spray applied. Ambient air temperature at application shall be 20 degrees F (-6 degrees C) or greater. Application temperature of Tuff-N-Dri spray-applied waterproofing membrane shall be in accordance with the manufacturer's published installation instructions.
5. Backfilling shall not begin sooner than 24 hours after membrane application.
6. The approval is limited to an evaluation of Tuff-N-Dri spray-applied waterproofing membrane applied at a minimum wet thickness of 0.060-inch (1.52 mm) (60 mils), which cures to a minimum dry film thickness of 0.040-inch (1.02 mm) (40 mils).
7. Application of Tuff-N-Dri spray-applied waterproofing membrane on uncured concrete is outside the scope of this evaluation.

NOTE: The cited code sections below are related to the use of Tuff-N-Dri spray-applied waterproofing membrane but, not within the scope of the evaluation. However, the code sections are related to the determination of code compliance.

The **Comm** code limitations are in accordance with the current **Wisconsin Uniform Dwelling Code (UDC)**, (for 1 & 2 family dwellings):

- **Dampproofing/Waterproofing of Footings and Foundation Walls:** Before the Tuff-N-Dri spray-applied waterproofing membrane is installed, footings and foundation walls shall be designed in accordance with s. **Comm 21.15** and **21.18(1) –(3)**.
- **Erosion Control Procedures:** shall be in accordance with s. **Comm 21.125**.

This approval will be valid through December 31, 2009, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:

Approval Date: February 26, 2004 By: _____

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Product & Material Review
Integrated Services Bureau